



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/705,351      | 11/03/2000  | Yuichi Ijiri         | 4296-125            | 6855             |

7590

01/09/2006

Mathews Collins Shephaerd & Gould PA  
100 Thanet Circle  
Suite 306  
Princeton, NJ 08540

|          |
|----------|
| EXAMINER |
|----------|

FORD, JOHN K

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3753

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 09/705,351             |  | IJIRI ET AL.        |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | John K. Ford           |  | 3753                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on August 2, 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 9-12, 17-24 is/are pending in the application.
- 4a) Of the above claim(s) 9-12, 17, 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8, 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Applicant's response of August 2, 2004 has been studied carefully. The examiner apologizes on behalf of the PTO for the long delay in responding to the August 2, 2004 response, which was administrative in nature.

Applicant's election of the apparatus of claims 1, 5, 18 and 19, with traverse, is acknowledged. Method claims 9-12, 17 and 20-24 are withdrawn at this time and applicants retain the right to file a divisional application to that subject matter. As to the traverse based on the allegation a search of the apparatus would necessarily uncover the method of use of the apparatus is not agreed with. As the rejections that follow will show, the apparatus may have many uses other than with the "easy polymerizable" substances claimed in the method claims, evidence that the scope of the method and apparatus claims is not coextensive. In addition, applicant has not traversed any of the detailed reasons for restriction given by the examiner and, therefore, the restriction is deemed proper and made final.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18 it states that the shell side port (by disclosure, port 1004 in Figure 10) and the drain pipe (by disclosure, port 1007 in Figure 10) are "immediately adjacent" one another. This appears to be entirely mis-descriptive as the two ports in question

Art Unit: 3753

are on opposite sides of the heat exchanger in positions that are about as far apart as one can imagine.

As well, in claims 1 and 18, when it comes to claiming using words requiring assessment of a "degree" of closeness (i.e. "*immediately adjacent*") the specification must give the reader some yardstick by which to measure such a degree of closeness. It does not here. There is no guidance as to how to figure out whether or not something is "immediately adjacent". See Seattle Boxcar v. Industrial Crating, 221 USPQ 568, 573-574 (Fed. Cir. 1984), discussing an indefiniteness rejection. The Examiner believes that such a limitation is inherently ambiguous.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Deuse (USP 4,236,576).

Note in Figure 1 that conduits 23 and 17 are deemed to be “immediately adjacent” to one another outside of the heat exchanger and are connected together so that they pass the same fluid. If not, to have made them so to save on piping would have been obvious to one of ordinary skill. Note in Figures 2 and 3 that vent pipe 23 is connected to the upper tube sheet (shown in cross-section in Figure 3), which is formed with conduits 22 and 21 internal to it (very similar to what applicant has disclosed in elected Figure 3). Regarding claim 5, Deuse is a tube and shell heat exchanger.

Claim 18 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kieren (USP 808,385).

In Kieren an inlet port for the tube-side fluid is shown at 15 and an outlet port for the same at 29. An inlet port for the shell-side fluid is shown at the juncture of pipe 30 and shell 5. An outlet for the shell-side fluid is shown at 31. A drain pipe 33 is formed as part of the lower tube sheet 19 and drains chamber 18. Drain pipe 33 has the same fluid passing through it as the outlet for the shell-side fluid is shown at 31. The aforementioned discussions of the meaning of “immediately adjacent” in the context of these claims is incorporated here by reference.

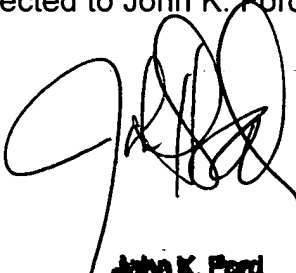
Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Kieren (USP 808,385) and Deuse (USP 4,236,576).

Kieren (USP 808,385) and Deuse (USP 4,236,576) are both discussed above and those explanations are incorporated here by reference.

To have provided the upper tube plate (11) of Kieren with a port (23 and associated passages 22 and 21 as taught by Deuse in Figure 3) would have been obvious to one of ordinary skill to improve the efficiency of the device by allowing more flow of the shell-side fluid over the outside of the tubes near the top of the device. Furthermore, to have connected that port (in the modified Kieren structure) to the outlet the port at the upper end of pipe 17 of Kieren or to the pipe existing to the left of the junction of pipes 31 and 33 in Kieren would have been obvious to one of ordinary skill in the art to permit the flow to be conveniently pumped away without the necessity of two pumps. This connection to the port in the modified Kieren structure is fairly taught by Deuse (where pipes 17 and 23 are shown to be connected to one another).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McNeal (USP 2,181,704) and JP 55-43354 show vents in the upper tube plate. In addition, McNeal shows a drain pipe 33 passing through the lower tube sheet.

Any inquiry concerning this communication should be directed to John K. Ford at telephone number 571-272-4911.



**John K. Ford**  
**Primary Examiner**